

# WEST Search History

DATE: Thursday, April 05, 2007

<u>Hide?</u>	<u>Set Name</u>	<u>Query</u>	<u>Hit Count</u>
<i>DB=PGPB,USPT,USOC,EPAB,DWPI; PLUR=YES; OP=ADJ</i>			
<input type="checkbox"/>	L1	20030007152	2
<input type="checkbox"/>	L2	L1 and four wave mixing	1
<input type="checkbox"/>	L3	L2 and microarray	0
<input type="checkbox"/>	L4	L1 and microarray	0
<input type="checkbox"/>	L5	L1 and array	2
<input type="checkbox"/>	L6	L1 and biochip	0
<input type="checkbox"/>	L7	I1 and chip	0
<input type="checkbox"/>	L8	I1 and (DNA or nucleic acid or oligonucleotide or polynucleotide or probe)	1
<input type="checkbox"/>	L9	6248540.pn.	2
<input type="checkbox"/>	L10	L9 and array	2
<input type="checkbox"/>	L11	L10 and four wave mixing	1
<input type="checkbox"/>	L12	(biochip or array or microarray) and optical spectroscopy	826
<input type="checkbox"/>	L13	L12 and wave mixing	45
<input type="checkbox"/>	L14	L13 and (DNA or oligonucleotide or probe or nucleic acid)	40
<input type="checkbox"/>	L15	(degenerate near (four wave mixing)) or DFWM	449
<input type="checkbox"/>	L16	L15 and (array or substrate or microarray or biochip or chip)	290
<input type="checkbox"/>	L17	L16 and (DNA or oligonucleotide or nucleic acid)	33
<input type="checkbox"/>	L18	10/540224	1
<input type="checkbox"/>	L19	((microarray or array or biochip or chip) same (DNA or polynucleotide or probe or nucleic acid or oligonucleotide))	75955
<input type="checkbox"/>	L20	optical near (degenerate four-wave mixing or DFWM)	27
<input type="checkbox"/>	L21	(optical near (degenerate four-wave mixing or DFWM))	27
<input type="checkbox"/>	L22	L21 and L18	1
<input type="checkbox"/>	L23	L21 and L19	17
<input type="checkbox"/>	L24	L23 and scan\$	17
<input type="checkbox"/>	L25	L24 and signal\$	17
<input type="checkbox"/>	L26	L25 and background	16
<input type="checkbox"/>	L27	L26 and (forward near scatter\$)	1
<input type="checkbox"/>	L28	L25 and (forward near scatter\$)	2
<input type="checkbox"/>	L29	L20 and (forward near scatter\$)	2
<input type="checkbox"/>	L30	L26 and (pump near beam)	1
<input type="checkbox"/>	L31	L26 and (pump)	9
<input type="checkbox"/>	L32	L31 and beam	9
<input type="checkbox"/>	L33	L32 and probe	9

<input type="checkbox"/>	L34	L33	9
<input type="checkbox"/>	L35	L33 and scatter\$	9
<input type="checkbox"/>	L36	L21 and metal	22
<input type="checkbox"/>	L37	L36 and (capillary electrophoresis)	2
<input type="checkbox"/>	L38	L36 and (electrophoresis)	2

END OF SEARCH HISTORY

## Connecting via Winsock to STN

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FILE 'HOME' ENTERED AT 12:35:01 ON 05 APR 2007

FILES 'MEDLINE, CAPLUS, EMBASE, BIOTECHDS, SCISEARCH, BIOSIS'  
ENTERED AT 12:36:15 ON 05 APR 2007  
ALL COPYRIGHTS AND RESTRICTIONS APPLY. SEE HELP USAGETERMS FOR DETAILS.

## 6 FILES IN THE FILE LIST

=> file  
ENTER A FILE NAME OR (HOME) :end

=> s (four wave mixing) and microchip  
L1 13 (FOUR WAVE MIXING) AND MICROCHIP

## => s microchip and wave-mixing

```
=> dup rem l1
PROCESSING COMPLETED FOR L1
L3          8 DUP REM L1 (5 DUPLICATES REMOVED)
```

=> dup rem l2  
PROCESSING COMPLETED FOR L2.  
L4 8 DUP REM L2 (5 DUPLICATES REMOVED)

=> d ibib abs ibib abs 1-8 13

L3 ANSWER 1 OF 8 SCISEARCH COPYRIGHT (c) 2007 The Thomson Corporation on  
STN

ACCESSION NUMBER: 2006:653014 SCISEARCH

THE GENUINE ARTICLE: 056VM

TITLE: Enhanced visible continuum generation from a microchip 1064nm laser

AUTHOR: Xiong C (Reprint); Witkowska A; Leon-Saval S G; Birks T A;  
Wadsworth W J

CORPORATE SOURCE: Wadsworth W.S.  
Univ Bath, Dept Phys, Ctr Photon & Photon Mat, Bath BA2  
7AY, Avon, England (Reprint)  
w.j.wadsworth@bath.ac.uk

COUNTRY OF AUTHOR: England  
SOURCE: OPTICS EXPRESS, (26 JUN 2006) Vol. 14, No. 13, pp. 6188-6193.

PUBLISHER: ISSN: 1094-4087.  
OPTICAL SOC AMER, 2010 MASSACHUSETTS AVE NW, WASHINGTON,  
DC 20036 USA.

DOCUMENT TYPE: Article; Journal

**LANGUAGE:** English

**REFERENCE COUNT:**

ENTRY DATE:

Last Updated on STN: 13

\*ABSTRACT IS AVAILABLE IN THE ALL

rate a cascaded nonlinear process using pump conversion.

we demonstrate a cascaded nonlinear process using pump conversion at 742 nm by four-wave mixing in the normal

dispersion regime then continuum generation by modulation instability to generate bright single-mode visible continuum with an average power up to -20 dBm/nm, from a compact 1064 nm infrared source in a monolithic single-mode photonic crystal fibre with a tapered section in one end.

ACCESSION NUMBER: 2006:653014 SCISEARCH

THE GENUINE ARTICLE: 056VM

TITLE: Enhanced visible continuum generation from a microchip 1064nm laser

AUTHOR: Xiong C (Reprint); Witkowska A; Leon-Saval S G; Birks T A; Wadsworth W J

CORPORATE SOURCE: Univ Bath, Dept Phys, Ctr Photon & Photon Mat, Bath BA2 7AY, Avon, England (Reprint)  
w.j.wadsworth@bath.ac.uk

COUNTRY OF AUTHOR: England

SOURCE: OPTICS EXPRESS, (26 JUN 2006) Vol. 14, No. 13, pp. 6188-6193.

ISSN: 1094-4087.

PUBLISHER: OPTICAL SOC AMER, 2010 MASSACHUSETTS AVE NW, WASHINGTON, DC 20036 USA.

DOCUMENT TYPE: Article; Journal

LANGUAGE: English

REFERENCE COUNT: 9

ENTRY DATE: Entered STN: 13 Jul 2006

Last Updated on STN: 13 Jul 2006

\*ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS\*

AB We demonstrate a cascaded nonlinear process using pump conversion to 742 nm by four-wave mixing in the normal dispersion regime then continuum generation by modulation instability to generate bright single-mode visible continuum with an average power up to -20 dBm/nm, from a compact 1064 nm infrared source in a monolithic single-mode photonic crystal fibre with a tapered section in one end.

L3 ANSWER 2 OF 8 CAPLUS COPYRIGHT 2007 ACS on STN DUPLICATE 1

ACCESSION NUMBER: 2004:650170 CAPLUS

DOCUMENT NUMBER: 141:184214

TITLE: Sensitive sensing based on optical nonlinear wave mixing

INVENTOR(S): Tong, William G.

PATENT ASSIGNEE(S): San Diego State University Foundation, USA

SOURCE: PCT Int. Appl., 58 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004068087	A2	20040812	WO 2004-US2409	20040127
WO 2004068087	A3	20050915		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI				
US 2006263777	A1	20061123	US 2006-540224	20060808
PRIORITY APPLN. INFO.:			US 2003-443225P	P 20030127
			WO 2004-US2409	W 20040127

AB Techniques and systems for using nonlinear four wave mixing to optically measure microarrays with sample cells of biol. or chemical materials. Examples of suitable microarrays include but are not limited to DNA microchips and capillary electrophoresis microarrays.

ACCESSION NUMBER: 2004:650170 CAPLUS

DOCUMENT NUMBER: 141:184214

TITLE: Sensitive sensing based on optical nonlinear wave

INVENTOR(S): mixing  
Tong, William G.  
PATENT ASSIGNEE(S): San Diego State University Foundation, USA  
SOURCE: PCT Int. Appl., 58 pp.  
CODEN: PIXXD2  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004068087	A2	20040812	WO 2004-US2409	20040127
WO 2004068087	A3	20050915		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI				
US 2006263777	A1	20061123	US 2006-540224	20060808
PRIORITY APPLN. INFO.:			US 2003-443225P	P 20030127
			WO 2004-US2409	W 20040127

AB Techniques and systems for using nonlinear four wave mixing to optically measure microarrays with sample cells of biol. or chemical materials. Examples of suitable microarrays include but are not limited to DNA microchips and capillary electrophoresis microarrays.

L3 ANSWER 3 OF 8 CAPLUS COPYRIGHT 2007 ACS on STN  
ACCESSION NUMBER: 2004:1101741 CAPLUS  
DOCUMENT NUMBER: 143:218818  
TITLE: Compact supercontinuum generation and four-wave mixing in PCF with 10 ns laser pulses  
AUTHOR(S): Wadsworth, W. J.; Joly, N. Y.; Biancalana, F.; Knight, J. C.; Birks, T. A.; Russell, P. St. J.  
CORPORATE SOURCE: Optoelectronics Group, Department of Physics, University of Bath, Bath, BA2 7AY, UK  
SOURCE: Trends in Optics and Photonics (2004), 96/B(Conference on Lasers and Electro-Optics, 2004), CThC3/1-CThC3/2  
CODEN: TOPRBS  
PUBLISHER: Optical Society of America  
DOCUMENT TYPE: Journal  
LANGUAGE: English  
AB The authors report broad flat supercontinuum, 500-1750 nm, using a kHz train of nanosecond Q-switched microchip laser pulses at 1064 nm or 1047 nm. The same systems exhibit strong parametric generation of FWM peaks, e.g. at 732/1945 nm or 895/1315 nm.  
ACCESSION NUMBER: 2004:1101741 CAPLUS  
DOCUMENT NUMBER: 143:218818  
TITLE: Compact supercontinuum generation and four-wave mixing in PCF with 10 ns laser pulses  
AUTHOR(S): Wadsworth, W. J.; Joly, N. Y.; Biancalana, F.; Knight, J. C.; Birks, T. A.; Russell, P. St. J.  
CORPORATE SOURCE: Optoelectronics Group, Department of Physics, University of Bath, Bath, BA2 7AY, UK  
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DOCUMENT TYPE: Journal  
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peaks, e.g. at 732/1945 nm or 895/1315 nm.  
REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 4 OF 8 MEDLINE on STN DUPLICATE 2  
ACCESSION NUMBER: 2003453285 MEDLINE  
DOCUMENT NUMBER: PubMed ID: 14514112  
TITLE: Generation of a broadband single-mode supercontinuum in a conventional dispersion-shifted fiber by use of a subnanosecond microchip laser.  
AUTHOR: Mussot Arnaud; Sylvestre Thibaut; Provino Laurent; Maillotte Herve  
CORPORATE SOURCE: Laboratoire d'Optique P. M. Duffieux, Unite Mixte de Recherche, Centre National de la Recherche Scientifique/Universite de Franche-Comte 6603, 25030 Besancon cedex, France.. amussot@univ-fcomte.fr  
SOURCE: Optics letters, (2003 Oct 1) Vol. 28, No. 19, pp. 1820-2.  
JOURNAL code: 7708433. ISSN: 0146-9592.  
PUB. COUNTRY: United States  
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)  
LANGUAGE: English  
FILE SEGMENT: NONMEDLINE; PUBMED-NOT-MEDLINE  
ENTRY MONTH: 200311  
ENTRY DATE: Entered STN: 30 Sep 2003  
Last Updated on STN: 8 Nov 2003  
Entered Medline: 7 Nov 2003

AB We report the experimental generation, simply by use of a subnanosecond microchip laser at 532 nm and a conventional dispersion-shifted fiber, of a supercontinuum that spans more than 1100 nm. We show by detailed spectral analysis that this supercontinuum originates from a preliminary four-wave mixing process with multimode phase matching and subsequent double-cascade stimulated Raman scattering and is transversely single mode as a result of Raman-induced mode competition. This technique is believed to be the simplest configuration that allows one to generate a stable supercontinuum.

ACCESSION NUMBER: 2003453285 MEDLINE  
DOCUMENT NUMBER: PubMed ID: 14514112  
TITLE: Generation of a broadband single-mode supercontinuum in a conventional dispersion-shifted fiber by use of a subnanosecond microchip laser.  
AUTHOR: Mussot Arnaud; Sylvestre Thibaut; Provino Laurent; Maillotte Herve  
CORPORATE SOURCE: Laboratoire d'Optique P. M. Duffieux, Unite Mixte de Recherche, Centre National de la Recherche Scientifique/Universite de Franche-Comte 6603, 25030 Besancon cedex, France.. amussot@univ-fcomte.fr  
SOURCE: Optics letters, (2003 Oct 1) Vol. 28, No. 19, pp. 1820-2.  
JOURNAL code: 7708433. ISSN: 0146-9592.  
PUB. COUNTRY: United States  
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)  
LANGUAGE: English  
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configuration that allows one to generate a stable supercontinuum.

L3 ANSWER 5 OF 8 CAPLUS COPYRIGHT 2007 ACS on STN  
ACCESSION NUMBER: 2002:507355 CAPLUS  
DOCUMENT NUMBER: 137:192365  
TITLE: Stokes-like emissions from laser-diode-pumped  
microchip neodymium-doped solid-state lasers  
AUTHOR(S): Chern, Jyh-Long; Kubota, Tamaki; Lim, Tsong-Shin;  
Otsuka, Kenju  
CORPORATE SOURCE: Department of Physics, National Cheng Kung University,  
Tainan, 70101, Taiwan  
SOURCE: Journal of the Optical Society of America B: Optical  
Physics (2002), 19(7), 1668-1675  
CODEN: JOBPDE; ISSN: 0740-3224  
PUBLISHER: Optical Society of America  
DOCUMENT TYPE: Journal  
LANGUAGE: English  
AB Stokes-like IR (1560-1600-nm) emissions, which were observed in laser-diode-  
(LD-) pumped microchip Nd-doped lasers, are reexamd. exptl.  
Dependences of IR emissions on pump wavelengths, pump densities, and  
operating temps. are studied. The response of IR emissions to coherent  
probe-beam injection is studied using a tunable LD light source. Optical  
phonons emitted through Auger recombination processes that result from LD  
high-d. pumping probably induce resonant intracavity stimulated  
phonon-sideband emissions.  
ACCESSION NUMBER: 2002:507355 CAPLUS  
DOCUMENT NUMBER: 137:192365  
TITLE: Stokes-like emissions from laser-diode-pumped  
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AUTHOR(S): Chern, Jyh-Long; Kubota, Tamaki; Lim, Tsong-Shin;  
Otsuka, Kenju  
CORPORATE SOURCE: Department of Physics, National Cheng Kung University,  
Tainan, 70101, Taiwan  
SOURCE: Journal of the Optical Society of America B: Optical  
Physics (2002), 19(7), 1668-1675  
CODEN: JOBPDE; ISSN: 0740-3224  
PUBLISHER: Optical Society of America  
DOCUMENT TYPE: Journal  
LANGUAGE: English  
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Dependences of IR emissions on pump wavelengths, pump densities, and  
operating temps. are studied. The response of IR emissions to coherent  
probe-beam injection is studied using a tunable LD light source. Optical  
phonons emitted through Auger recombination processes that result from LD  
high-d. pumping probably induce resonant intracavity stimulated  
phonon-sideband emissions.  
REFERENCE COUNT: 23 THERE ARE 23 CITED REFERENCES AVAILABLE FOR THIS  
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 6 OF 8 CAPLUS COPYRIGHT 2007 ACS on STN DUPLICATE 3  
ACCESSION NUMBER: 2002:258478 CAPLUS  
DOCUMENT NUMBER: 136:408687  
TITLE: Supercontinuum generation in air-silica  
microstructured fibers with nanosecond and femtosecond  
pulse pumping  
AUTHOR(S): Dudley, John M.; Provino, Laurent; Grossard, Nicolas;  
Maillette, Herve; Windeler, Robert S.; Eggleton,  
Benjamin J.; Coen, Stephane  
CORPORATE SOURCE: Laboratoire d'Optique P. M. Duffieux, Centre National  
de la Recherche Scientifique, Unite Mixte de Recherche  
6603, and Institut des Mirotechniques de  
Franche-Comte, Federation de Recherche 67, Universite,  
de Franche-Comte, Besancon, Fr.

SOURCE: Journal of the Optical Society of America B: Optical Physics (2002), 19(4), 765-771  
CODEN: JOBPDE; ISSN: 0740-3224

PUBLISHER: Optical Society of America  
DOCUMENT TYPE: Journal  
LANGUAGE: English

AB The authors study the generation of supercontinua in air-SiO<sub>2</sub> microstructured fibers by both nanosecond and femtosecond pulse excitation. In the nanosecond expts., a 300-nm broadband visible continuum was generated in a 1.8-m length of fiber pumped at 532 nm by 0.8-ns pulses from a frequency-doubled passively Q-switched Nd:YAG microchip laser. At this wavelength, the dominant mode excited under the conditions of continuum generation is the LP11 mode, and, with nanosecond pumping, self-phase modulation is negligible and the continuum generation is dominated by the interplay of Raman and parametric effects. The spectral extent of the continuum is well explained by calcns. of the parametric gain curves for 4-wave mixing about the zero-dispersion wavelength of the LP11 mode. In the femtosecond expts., an 800-nm broadband visible and near-IR continuum was generated in a 1-m length of fiber pumped at 780 nm by 100-fs pulses from a Kerr-lens model-locked Ti:sapphire laser. At this wavelength, excitation and continuum generation occur in the LP01 mode, and the spectral width of the observed continuum is consistent with the phase-matching bandwidth for parametric processes calculated for this fiber mode. In addition, numerical simulations based on an extended nonlinear Schrodinger equation were used to model supercontinuum generation in the femtosecond regime, with the simulation results reproducing the major features of the exptl. observed spectrum.

ACCESSION NUMBER: 2002:258478 CAPLUS  
DOCUMENT NUMBER: 136:408687  
TITLE: Supercontinuum generation in air-silica microstructured fibers with nanosecond and femtosecond pulse pumping  
AUTHOR(S): Dudley, John M.; Provino, Laurent; Grossard, Nicolas; Maillette, Herve; Windeler, Robert S.; Eggleton, Benjamin J.; Coen, Stephane  
CORPORATE SOURCE: Laboratoire d'Optique P. M. Duffieux, Centre National de la Recherche Scientifique, Unite Mixte de Recherche 6603, and Institut des Mirotechniques de Franche-Comte, Federation de Recherche 67, Universite, de Franche-Comte, Besancon, Fr.  
SOURCE: Journal of the Optical Society of America B: Optical Physics (2002), 19(4), 765-771  
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PUBLISHER: Optical Society of America  
DOCUMENT TYPE: Journal  
LANGUAGE: English

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based on an extended nonlinear Schrodinger equation were used to model supercontinuum generation in the femtosecond regime, with the simulation results reproducing the major features of the exptl. observed spectrum.

REFERENCE COUNT: 36 THERE ARE 36 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 7 OF 8 CAPLUS COPYRIGHT 2007 ACS on STN DUPLICATE 4

ACCESSION NUMBER: 2000:347428 CAPLUS

DOCUMENT NUMBER: 133:24317

TITLE: 1.5- $\mu$ m emissions from laser-diode-pumped Nd-doped microchip solid-state lasers

AUTHOR(S): Hwong, Siao-Lung; Chern, Jyh-Long; Otsuka, Kenju; Huang, Yu-Hsiang; Kawai, Ryoji; Ohki, Kazuyoshi

CORPORATE SOURCE: Department of Physics, National Cheng Kung University, Tainan, 70101, Taiwan

SOURCE: Optics Letters (2000), 25(9), 646-648

CODEN: OPLEDP; ISSN: 0146-9592

PUBLISHER: Optical Society of America

DOCUMENT TYPE: Journal

LANGUAGE: English

AB 1.5- $\mu$ M emissions from Nd:YAG, Nd:YVO<sub>4</sub>, and LiNdP4O12 microchip lasers pumped by laser diodes were observed. These coherent emissions are attributed to the effect of high-energy modified lattice vibration owing to the existence of Nd ions as well as to stimulated intracavity Raman scattering enhanced by the microchip configuration. A 4-wave mixing process involving 2 lasing fields and a Stokes field was identified as the generator of new adjacent 1.5- $\mu$ m emission.

ACCESSION NUMBER: 2000:347428 CAPLUS

DOCUMENT NUMBER: 133:24317

TITLE: 1.5- $\mu$ m emissions from laser-diode-pumped Nd-doped microchip solid-state lasers

AUTHOR(S): Hwong, Siao-Lung; Chern, Jyh-Long; Otsuka, Kenju; Huang, Yu-Hsiang; Kawai, Ryoji; Ohki, Kazuyoshi

CORPORATE SOURCE: Department of Physics, National Cheng Kung University, Tainan, 70101, Taiwan

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CODEN: OPLEDP; ISSN: 0146-9592

PUBLISHER: Optical Society of America

DOCUMENT TYPE: Journal

LANGUAGE: English

AB 1.5- $\mu$ M emissions from Nd:YAG, Nd:YVO<sub>4</sub>, and LiNdP4O12 microchip lasers pumped by laser diodes were observed. These coherent emissions are attributed to the effect of high-energy modified lattice vibration owing to the existence of Nd ions as well as to stimulated intracavity Raman scattering enhanced by the microchip configuration. A 4-wave mixing process involving 2 lasing fields and a Stokes field was identified as the generator of new adjacent 1.5- $\mu$ m emission.

REFERENCE COUNT: 18 THERE ARE 18 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 8 OF 8 SCISEARCH COPYRIGHT (c) 2007 The Thomson Corporation on STN

ACCESSION NUMBER: 1995:197296 SCISEARCH

THE GENUINE ARTICLE: QM885

TITLE: EFFICIENT DEGENERATE 4-WAVE-MIXING IN A DIODE-PUMPED MICROCHIP ND-YVO<sub>4</sub> AMPLIFIER

AUTHOR: BRIGNON A (Reprint); FEUGNET G; HUIGNARD J P; POCHOLLE J P  
CORPORATE SOURCE: THOMSON CSF, CENT RECH LAB, F-91404 ORSAY, FRANCE  
(Reprint)

COUNTRY OF AUTHOR: FRANCE

SOURCE: OPTICS LETTERS, (15 MAR 1995) Vol. 20, No. 6, pp. 548-550.  
ISSN: 0146-9592.

PUBLISHER: OPTICAL SOC AMER, 2010 MASSACHUSETTS AVE NW, WASHINGTON, DC 20036.

DOCUMENT TYPE: Article; Journal  
FILE SEGMENT: PHYS; ENGI  
LANGUAGE: English  
REFERENCE COUNT: 14  
ENTRY DATE: Entered STN: 1995  
Last Updated on STN: 1995  
\*ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS\*

AB The process of saturable-gain degenerate four-wave mixing in a diode-pumped microchip Nd:YVO<sub>4</sub> amplifier is investigated. To enhance the efficiency of the interaction, multipass geometries are employed in which the weak signal beam and therefore the conjugate beam experience several passes in the gain medium. Degenerate four-wave mixing reflectivities as high as R = 10% and R = 170% have been obtained experimentally for 130-W diode pumping with two-pass and four-pass geometries, respectively. Finally, the imaging capabilities of the volume population hologram written in the Nd:YVO<sub>4</sub> amplifier are demonstrated.

ACCESSION NUMBER: 1995:197296 SCISEARCH  
THE GENUINE ARTICLE: QM885  
TITLE: EFFICIENT DEGENERATE 4-WAVE-MIXING IN A DIODE-PUMPED MICROCHIP ND-YVO<sub>4</sub> AMPLIFIER  
AUTHOR: BRIGNON A (Reprint); FEUGNET G; HUIGNARD J P; POCHOLLE J P  
CORPORATE SOURCE: THOMSON CSF, CENT RECH LAB, F-91404 ORSAY, FRANCE  
(Reprint)  
COUNTRY OF AUTHOR: FRANCE  
SOURCE: OPTICS LETTERS, (15 MAR 1995) Vol. 20, No. 6, pp. 548-550.  
ISSN: 0146-9592.  
PUBLISHER: OPTICAL SOC AMER, 2010 MASSACHUSETTS AVE NW, WASHINGTON, DC 20036.  
DOCUMENT TYPE: Article; Journal  
FILE SEGMENT: PHYS; ENGI  
LANGUAGE: English  
REFERENCE COUNT: 14  
ENTRY DATE: Entered STN: 1995  
Last Updated on STN: 1995  
\*ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS\*

AB The process of saturable-gain degenerate four-wave mixing in a diode-pumped microchip Nd:YVO<sub>4</sub> amplifier is investigated. To enhance the efficiency of the interaction, multipass geometries are employed in which the weak signal beam and therefore the conjugate beam experience several passes in the gain medium. Degenerate four-wave mixing reflectivities as high as R = 10% and R = 170% have been obtained experimentally for 130-W diode pumping with two-pass and four-pass geometries, respectively. Finally, the imaging capabilities of the volume population hologram written in the Nd:YVO<sub>4</sub> amplifier are demonstrated.

=> d his

(FILE 'HOME' ENTERED AT 12:35:01 ON 05 APR 2007)

FILE 'MEDLINE, CAPLUS, EMBASE, BIOTECHDS, SCISEARCH, BIOSIS' ENTERED AT 12:36:15 ON 05 APR 2007

L1 13 S (FOUR WAVE MIXING) AND MICROCHIP  
L2 13 S MICROCHIP AND WAVE-MIXING  
L3 8 DUP REM L1 (5 DUPLICATES REMOVED)  
L4 8 DUP REM L2 (5 DUPLICATES REMOVED)

=> s (l3 or l4) and DNA  
L5 1 (L3 OR L4) AND DNA

=> d all

LS ANSWER 1 OF 1 CAPLUS COPYRIGHT 2007 ACS on STN  
AN 2004:650170 CAPLUS  
DN 141:184214  
ED Entered STN: 12 Aug 2004  
TI Sensitive sensing based on optical nonlinear wave mixing  
IN Tong, William G.  
PA San Diego State University Foundation, USA  
SO PCT Int. Appl., 58 pp.  
CODEN: PIXXD2  
DT Patent  
LA English  
IC ICM G01J  
CC 79-5 (Inorganic Analytical Chemistry)  
Section cross-reference(s): 3, 9, 80

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2004068087	A2	20040812	WO 2004-US2409	20040127
	WO 2004068087	A3	20050915		
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI US 2006263777	A1	20061123	US 2006-540224	20060808
PRAI	US 2003-443225P	P	20030127		
	WO 2004-US2409	W	20040127		

CLASS

	PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
	WO 2004068087	ICM	G01J
		IPCI	G01J [ICM, 7]
		IPCR	G01J0003-42 [I,C*]; G01J0003-42 [I,A]; G01N0021-25 [I,C*]; G01N0021-25 [I,A]; G01N0021-63 [I,C*]; G01N0021-63 [I,A]; G01N0030-00 [I,C*]; G01N0030-74 [I,A]
		ECLA	G01J003/42; G01N021/25B2; G01N021/63H; G01N030/74
	US 2006263777	IPCI	C12Q0001-68 [I,A]; C12M0001-34 [I,A]
		NCL	435/006.000; 435/287.200; 204/451.000

AB Techniques and systems for using nonlinear four wave mixing to optically measure microarrays with sample cells of biol. or chemical materials. Examples of suitable microarrays include but are not limited to DNA microchips and capillary electrophoresis microarrays.

ST sensing optical nonlinear wave

IT Apparatus

(Microchip; sensitive sensing based on optical nonlinear wave mixing)

IT Four wave mixing

(Nonlinear; sensitive sensing based on optical nonlinear wave mixing)

IT Degenerate four wave mixing

Noise

Wavelength

(Optical; sensitive sensing based on optical nonlinear wave mixing)

IT Capillary electrophoresis apparatus

(microarrays; sensitive sensing based on optical nonlinear wave mixing)

IT DNA

RL: ANT (Analyte); ANST (Analytical study)

(microchips; sensitive sensing based on optical nonlinear wave mixing)

IT Absorption spectra

Biological materials

Capillary electrophoresis  
Cations  
Chelation  
Chemicals  
Chromophores  
Concentration (condition)  
Configuration  
    DNA microarray technology  
    DNA sequences  
Frequency  
Heterogeneity  
Imaging  
Laser radiation  
Lasers  
Light  
Light scattering  
Liquids  
Microarray technology  
Molecules  
Nucleic acid hybridization  
Optical detectors  
Optical filters  
Protein microarray technology  
Samples  
Solutions  
    (sensitive sensing based on optical nonlinear wave  
    mixing)

IT DNA  
Proteins  
RL: ANT (Analyte); ANST (Analytical study)  
    (sensitive sensing based on optical nonlinear wave  
    mixing)

IT Oligonucleotides  
RL: CPS (Chemical process); DEV (Device component use); PEP (Physical,  
engineering or chemical process); PROC (Process); USES (Uses)  
    (sensitive sensing based on optical nonlinear wave  
    mixing)

=> d his

(FILE 'HOME' ENTERED AT 12:35:01 ON 05 APR 2007)

FILE 'MEDLINE, CAPLUS, EMBASE, BIOTECHDS, SCISEARCH, BIOSIS' ENTERED AT  
12:36:15 ON 05 APR 2007

L1       13 S (FOUR WAVE MIXING) AND MICROCHIP  
L2       13 S MICROCHIP AND WAVE-MIXING  
L3       8 DUP REM L1 (5 DUPLICATES REMOVED)  
L4       8 DUP REM L2 (5 DUPLICATES REMOVED)  
L5       1 S (L3 OR L4) AND DNA

=> s (l4 or l3) and optical  
L6       4 (L4 OR L3) AND OPTICAL

=> d ibib abs 16 1-4

L6 ANSWER 1 OF 4 CAPLUS COPYRIGHT 2007 ACS on STN  
ACCESSION NUMBER: 2004:1101741 CAPLUS  
DOCUMENT NUMBER: 143:218818  
TITLE: Compact supercontinuum generation and four-  
wave mixing in PCF with 10 ns laser  
pulses  
AUTHOR(S): Wadsworth, W. J.; Joly, N. Y.; Biancalana, F.; Knight,  
J. C.; Birks, T. A.; Russell, P. St. J.

CORPORATE SOURCE: Optoelectronics Group, Department of Physics,  
 University of Bath, Bath, BA2 7AY, UK  
 SOURCE: Trends in Optics and Photonics (2004), 96/B (Conference  
 on Lasers and Electro-Optics, 2004), CThC3/1-CThC3/2  
 CODEN: TOPRBS  
 PUBLISHER: Optical Society of America  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 AB The authors report broad flat supercontinuum, 500-1750 nm, using a kHz  
 train of nanosecond Q-switched microchip laser pulses at 1064 nm  
 or 1047 nm. The same systems exhibit strong parametric generation of FWM  
 peaks, e.g. at 732/1945 nm or 895/1315 nm.  
 REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS  
 RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 2 OF 4 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2004:650170 CAPLUS  
 DOCUMENT NUMBER: 141:184214  
 TITLE: Sensitive sensing based on optical nonlinear  
 wave mixing  
 INVENTOR(S): Tong, William G.  
 PATENT ASSIGNEE(S): San Diego State University Foundation, USA  
 SOURCE: PCT Int. Appl., 58 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004068087	A2	20040812	WO 2004-US2409	20040127
WO 2004068087	A3	20050915		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI US 2006263777	A1	20061123	US 2006-540224	20060808
PRIORITY APPLN. INFO.:			US 2003-443225P	P 20030127
			WO 2004-US2409	W 20040127

AB Techniques and systems for using nonlinear four wave  
 mixing to optically measure microarrays with sample cells of biol.  
 or chemical materials. Examples of suitable microarrays include but are not  
 limited to DNA microchips and capillary electrophoresis microarrays.

L6 ANSWER 3 OF 4 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2002:507355 CAPLUS  
 DOCUMENT NUMBER: 137:192365  
 TITLE: Stokes-like emissions from laser-diode-pumped  
 microchip neodymium-doped solid-state lasers  
 AUTHOR(S): Chern, Jyh-Long; Kubota, Tamaki; Lim, Tsong-Shin;  
 Otsuka, Kenju  
 CORPORATE SOURCE: Department of Physics, National Cheng Kung University,  
 Tainan, 70101, Taiwan  
 SOURCE: Journal of the Optical Society of America B: Optical  
 Physics (2002), 19(7), 1668-1675  
 CODEN: JOBPDE; ISSN: 0740-3224  
 PUBLISHER: Optical Society of America  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 AB Stokes-like IR (1560-1600-nm) emissions, which were observed in laser-diode-  
 (LD-) pumped microchip Nd-doped lasers, are reexamd. exptl.  
 Dependences of IR emissions on pump wavelengths, pump densities, and  
 operating temps. are studied. The response of IR emissions to coherent

probe-beam injection is studied using a tunable LD light source. Optical phonons emitted through Auger recombination processes that result from LD high-d. pumping probably induce resonant intracavity stimulated phonon-sideband emissions.

REFERENCE COUNT: 23 THERE ARE 23 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 4 OF 4 CAPLUS COPYRIGHT 2007 ACS on STN  
ACCESSION NUMBER: 2002:258478 CAPLUS  
DOCUMENT NUMBER: 136:408687  
TITLE: Supercontinuum generation in air-silica  
microstructured fibers with nanosecond and femtosecond  
pulse pumping  
AUTHOR(S): Dudley, John M.; Provino, Laurent; Grossard, Nicolas;  
Maillette, Herve; Windeler, Robert S.; Eggleton,  
Benjamin J.; Coen, Stephane  
CORPORATE SOURCE: Laboratoire d'Optique P. M. Duffieux, Centre National  
de la Recherche Scientifique, Unite Mixte de Recherche  
6603, and Institut des Mirotechniques de  
Franche-Comte, Federation de Recherche 67, Universite,  
de Franche-Comte, Besancon, Fr.  
SOURCE: Journal of the Optical Society of America B: Optical  
Physics (2002), 19(4), 765-771  
CODEN: JOBPDE; ISSN: 0740-3224  
PUBLISHER: Optical Society of America  
DOCUMENT TYPE: Journal  
LANGUAGE: English

AB The authors study the generation of supercontinua in air-SiO<sub>2</sub> microstructured fibers by both nanosecond and femtosecond pulse excitation. In the nanosecond expts., a 300-nm broadband visible continuum was generated in a 1.8-m length of fiber pumped at 532 nm by 0.8-ns pulses from a frequency-doubled passively Q-switched Nd:YAG microchip laser. At this wavelength, the dominant mode excited under the conditions of continuum generation is the LP11 mode, and, with nanosecond pumping, self-phase modulation is negligible and the continuum generation is dominated by the interplay of Raman and parametric effects. The spectral extent of the continuum is well explained by calcns. of the parametric gain curves for 4-wave mixing about the zero-dispersion wavelength of the LP11 mode. In the femtosecond expts., an 800-nm broadband visible and near-IR continuum was generated in a 1-m length of fiber pumped at 780 nm by 100-fs pulses from a Kerr-lens model-locked Ti:sapphire laser. At this wavelength, excitation and continuum generation occur in the LP01 mode, and the spectral width of the observed continuum is consistent with the phase-matching bandwidth for parametric processes calculated for this fiber mode. In addition, numerical simulations based on an extended nonlinear Schrodinger equation were used to model supercontinuum generation in the femtosecond regime, with the simulation results reproducing the major features of the exptl. observed spectrum.

REFERENCE COUNT: 36 THERE ARE 36 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

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(FILE 'HOME' ENTERED AT 12:35:01 ON 05 APR 2007)

FILE 'MEDLINE, CAPLUS, EMBASE, BIOTECHDS, SCISEARCH, BIOSIS' ENTERED AT  
12:36:15 ON 05 APR 2007

L1 13 S (FOUR WAVE MIXING) AND MICROCHIP  
L2 13 S MICROCHIP AND WAVE-MIXING  
L3 8 DUP REM L1 (5 DUPLICATES REMOVED)  
L4 8 DUP REM L2 (5 DUPLICATES REMOVED)  
L5 1 S (L3 OR L4) AND DNA

L6

4 S (L4 OR L3) AND OPTICAL

=&gt; d ibib abs l3 1-8

L3 ANSWER 1 OF 8 SCISEARCH COPYRIGHT (c) 2007 The Thomson Corporation on STN  
 ACCESSION NUMBER: 2006:653014 SCISEARCH  
 THE GENUINE ARTICLE: 056VM  
 TITLE: Enhanced visible continuum generation from a microchip 1064nm laser  
 AUTHOR: Xiong C (Reprint); Witkowska A; Leon-Saval S G; Birks T A; Wadsworth W J  
 CORPORATE SOURCE: Univ Bath, Dept Phys, Ctr Photon & Photon Mat, Bath BA2 7AY, Avon, England (Reprint)  
 w.j.wadsworth@bath.ac.uk  
 COUNTRY OF AUTHOR: England  
 SOURCE: OPTICS EXPRESS, (26 JUN 2006) Vol. 14, No. 13, pp. 6188-6193.  
 ISSN: 1094-4087.  
 PUBLISHER: OPTICAL SOC AMER, 2010 MASSACHUSETTS AVE NW, WASHINGTON, DC 20036 USA.  
 DOCUMENT TYPE: Article; Journal  
 LANGUAGE: English  
 REFERENCE COUNT: 9  
 ENTRY DATE: Entered STN: 13 Jul 2006  
 Last Updated on STN: 13 Jul 2006

\*ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS\*

AB We demonstrate a cascaded nonlinear process using pump conversion to 742 nm by four-wave mixing in the normal dispersion regime then continuum generation by modulation instability to generate bright single-mode visible continuum with an average power up to -20 dBm/nm, from a compact 1064 nm infrared source in a monolithic single-mode photonic crystal fibre with a tapered section in one end.

L3 ANSWER 2 OF 8 CAPLUS COPYRIGHT 2007 ACS on STN DUPLICATE 1  
 ACCESSION NUMBER: 2004:650170 CAPLUS  
 DOCUMENT NUMBER: 141:184214  
 TITLE: Sensitive sensing based on optical nonlinear wave mixing  
 INVENTOR(S): Tong, William G.  
 PATENT ASSIGNEE(S): San Diego State University Foundation, USA  
 SOURCE: PCT Int. Appl., 58 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004068087	A2	20040812	WO 2004-US2409	20040127
WO 2004068087	A3	20050915		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI				
US 2006263777	A1	20061123	US 2006-540224	20060808
PRIORITY APPLN. INFO.:			US 2003-443225P	P 20030127
			WO 2004-US2409	W 20040127

AB Techniques and systems for using nonlinear four wave mixing to optically measure microarrays with sample cells of biol. or chemical materials. Examples of suitable microarrays include but are not limited to DNA microchips and capillary electrophoresis microarrays.

L3 ANSWER 3 OF 8 CAPLUS COPYRIGHT 2007 ACS on STN  
ACCESSION NUMBER: 2004:1101741 CAPLUS  
DOCUMENT NUMBER: 143:218818  
TITLE: Compact supercontinuum generation and four-wave mixing in PCF with 10 ns laser pulses  
AUTHOR(S): Wadsworth, W. J.; Joly, N. Y.; Biancalana, F.; Knight, J. C.; Birks, T. A.; Russell, P. St. J.  
CORPORATE SOURCE: Optoelectronics Group, Department of Physics, University of Bath, Bath, BA2 7AY, UK  
SOURCE: Trends in Optics and Photonics (2004), 96/B(Conference on Lasers and Electro-Optics, 2004), CThC3/1-CThC3/2  
CODEN: TOPRBS  
PUBLISHER: Optical Society of America  
DOCUMENT TYPE: Journal  
LANGUAGE: English  
AB The authors report broad flat supercontinuum, 500-1750 nm, using a kHz train of nanosecond Q-switched microchip laser pulses at 1064 nm or 1047 nm. The same systems exhibit strong parametric generation of FWM peaks, e.g. at 732/1945 nm or 895/1315 nm.  
REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 4 OF 8 MEDLINE on STN DUPLICATE 2  
ACCESSION NUMBER: 2003453285 MEDLINE  
DOCUMENT NUMBER: PubMed ID: 14514112  
TITLE: Generation of a broadband single-mode supercontinuum in a conventional dispersion-shifted fiber by use of a subnanosecond microchip laser.  
AUTHOR: Mussot Arnaud; Sylvestre Thibaut; Provino Laurent; Maillotte Herve  
CORPORATE SOURCE: Laboratoire d'Optique P. M. Duffieux, Unite Mixte de Recherche, Centre National de la Recherche Scientifique/Universite de Franche-Comte 6603, 25030 Besancon cedex, France.. amussot@univ-fcomte.fr  
SOURCE: Optics letters, (2003 Oct 1) Vol. 28, No. 19, pp. 1820-2.  
Journal code: 7708433. ISSN: 0146-9592.  
PUB. COUNTRY: United States  
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)  
LANGUAGE: English  
FILE SEGMENT: NONMEDLINE; PUBMED-NOT-MEDLINE  
ENTRY MONTH: 200311  
ENTRY DATE: Entered STN: 30 Sep 2003  
Last Updated on STN: 8 Nov 2003  
Entered Medline: 7 Nov 2003  
AB We report the experimental generation, simply by use of a subnanosecond microchip laser at 532 nm and a conventional dispersion-shifted fiber, of a supercontinuum that spans more than 1100 nm. We show by detailed spectral analysis that this supercontinuum originates from a preliminary four-wave mixing process with multimode phase matching and subsequent double-cascade stimulated Raman scattering and is transversely single mode as a result of Raman-induced mode competition. This technique is believed to be the simplest configuration that allows one to generate a stable supercontinuum.

L3 ANSWER 5 OF 8 CAPLUS COPYRIGHT 2007 ACS on STN  
ACCESSION NUMBER: 2002:507355 CAPLUS  
DOCUMENT NUMBER: 137:192365  
TITLE: Stokes-like emissions from laser-diode-pumped microchip neodymium-doped solid-state lasers  
AUTHOR(S): Chern, Jyh-Long; Kubota, Tamaki; Lim, Tsong-Shin; Otsuka, Kenju  
CORPORATE SOURCE: Department of Physics, National Cheng Kung University, Tainan, 70101, Taiwan

SOURCE: Journal of the Optical Society of America B: Optical Physics (2002), 19(7), 1668-1675  
CODEN: JOBPDE; ISSN: 0740-3224  
PUBLISHER: Optical Society of America  
DOCUMENT TYPE: Journal  
LANGUAGE: English  
AB Stokes-like IR (1560-1600-nm) emissions, which were observed in laser-diode-(LD-) pumped microchip Nd-doped lasers, are reexamd. exptl. Dependences of IR emissions on pump wavelengths, pump densities, and operating temps. are studied. The response of IR emissions to coherent probe-beam injection is studied using a tunable LD light source. Optical phonons emitted through Auger recombination processes that result from LD high-d. pumping probably induce resonant intracavity stimulated phonon-sideband emissions.  
REFERENCE COUNT: 23 THERE ARE 23 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 6 OF 8 CAPLUS COPYRIGHT 2007 ACS on STN DUPLICATE 3  
ACCESSION NUMBER: 2002:258478 CAPLUS  
DOCUMENT NUMBER: 136:408687  
TITLE: Supercontinuum generation in air-silica microstructured fibers with nanosecond and femtosecond pulse pumping  
AUTHOR(S): Dudley, John M.; Provino, Laurent; Grossard, Nicolas; Maillette, Herve; Windeler, Robert S.; Eggleton, Benjamin J.; Coen, Stephane  
CORPORATE SOURCE: Laboratoire d'Optique P. M. Duffieux, Centre National de la Recherche Scientifique, Unite Mixte de Recherche 6603, and Institut des Mirotechniques de Franche-Comte, Federation de Recherche 67, Universite, de Franche-Comte, Besancon, Fr.  
SOURCE: Journal of the Optical Society of America B: Optical Physics (2002), 19(4), 765-771  
CODEN: JOBPDE; ISSN: 0740-3224  
PUBLISHER: Optical Society of America  
DOCUMENT TYPE: Journal  
LANGUAGE: English  
AB The authors study the generation of supercontinua in air-SiO<sub>2</sub> microstructured fibers by both nanosecond and femtosecond pulse excitation. In the nanosecond expts., a 300-nm broadband visible continuum was generated in a 1.8-m length of fiber pumped at 532 nm by 0.8-ns pulses from a frequency-doubled passively Q-switched Nd:YAG microchip laser. At this wavelength, the dominant mode excited under the conditions of continuum generation is the LP11 mode, and, with nanosecond pumping, self-phase modulation is negligible and the continuum generation is dominated by the interplay of Raman and parametric effects. The spectral extent of the continuum is well explained by calcns. of the parametric gain curves for 4-wave mixing about the zero-dispersion wavelength of the LP11 mode. In the femtosecond expts., an 800-nm broadband visible and near-IR continuum was generated in a 1-m length of fiber pumped at 780 nm by 100-fs pulses from a Kerr-lens model-locked Ti:sapphire laser. At this wavelength, excitation and continuum generation occur in the LP01 mode, and the spectral width of the observed continuum is consistent with the phase-matching bandwidth for parametric processes calculated for this fiber mode. In addition, numerical simulations based on an extended nonlinear Schrodinger equation were used to model supercontinuum generation in the femtosecond regime, with the simulation results reproducing the major features of the exptl. observed spectrum.  
REFERENCE COUNT: 36 THERE ARE 36 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 7 OF 8 CAPLUS COPYRIGHT 2007 ACS on STN DUPLICATE 4  
ACCESSION NUMBER: 2000:347428 CAPLUS  
DOCUMENT NUMBER: 133:24317

TITLE: 1.5- $\mu$ m emissions from laser-diode-pumped Nd-doped  
 microchip solid-state lasers  
 AUTHOR(S): Hwong, Siao-Lung; Chern, Jyh-Long; Otsuka, Kenju;  
 Huang, Yu-Hsiang; Kawai, Ryoji; Ohki, Kazuyoshi  
 CORPORATE SOURCE: Department of Physics, National Cheng Kung University,  
 Tainan, 70101, Taiwan  
 SOURCE: Optics Letters (2000), 25(9), 646-648  
 CODEN: OPLEDP; ISSN: 0146-9592  
 PUBLISHER: Optical Society of America  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 AB 1.5- $\mu$ M emissions from Nd:YAG, Nd:YVO<sub>4</sub>, and LiNdP<sub>4</sub>O<sub>12</sub> microchip lasers pumped by laser diodes were observed. These coherent emissions are attributed to the effect of high-energy modified lattice vibration owing to the existence of Nd ions as well as to stimulated intracavity Raman scattering enhanced by the microchip configuration. A 4-wave mixing process involving 2 lasing fields and a Stokes field was identified as the generator of new adjacent 1.5- $\mu$ m emission.  
 REFERENCE COUNT: 18 THERE ARE 18 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 8 OF 8 SCISEARCH COPYRIGHT (c) 2007 The Thomson Corporation on  
 STN  
 ACCESSION NUMBER: 1995:197296 SCISEARCH  
 THE GENUINE ARTICLE: QM885  
 TITLE: EFFICIENT DEGENERATE 4-WAVE-MIXING IN A DIODE-PUMPED  
 MICROCHIP ND-YVO<sub>4</sub> AMPLIFIER  
 AUTHOR: BRIGNON A (Reprint); FEUGNET G; HUIGNARD J P; POCHOLLE J P  
 CORPORATE SOURCE: THOMSON CSF, CENT RECH LAB, F-91404 ORSAY, FRANCE  
 (Reprint)  
 COUNTRY OF AUTHOR: FRANCE  
 SOURCE: OPTICS LETTERS, (15 MAR 1995) Vol. 20, No. 6, pp. 548-550.  
 ISSN: 0146-9592.  
 PUBLISHER: OPTICAL SOC AMER, 2010 MASSACHUSETTS AVE NW, WASHINGTON,  
 DC 20036.  
 DOCUMENT TYPE: Article; Journal  
 FILE SEGMENT: PHYS; ENGI  
 LANGUAGE: English  
 REFERENCE COUNT: 14  
 ENTRY DATE: Entered STN: 1995  
 Last Updated on STN: 1995  
 \*ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS\*

AB The process of saturable-gain degenerate four-wave mixing in a diode-pumped microchip Nd:YVO<sub>4</sub> amplifier is investigated. To enhance the efficiency of the interaction, multipass geometries are employed in which the weak signal beam and therefore the conjugate beam experience several passes in the gain medium. Degenerate four-wave mixing reflectivities as high as R = 10% and R = 170% have been obtained experimentally for 130-W diode pumping with two-pass and four-pass geometries, respectively. Finally, the imaging capabilities of the volume population hologram written in the Nd:YVO<sub>4</sub> amplifier are demonstrated.

=> FIL STNGUIDE  
 COST IN U.S. DOLLARS  
 FULL ESTIMATED COST

	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	104.25	104.67
DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)	SINCE FILE ENTRY	TOTAL SESSION
CA SUBSCRIBER PRICE	-11.70	-11.70

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AND TECHNOLOGY CORPORATION, AND FACHINFORMATIONSZENTRUM KARLSRUHE

FILE CONTAINS CURRENT INFORMATION.  
LAST RELOADED: Mar 30, 2007 (20070330/UP).